

REMARKS

Reconsideration of the pending application is respectfully requested on the basis of the following particulars:

In the claims

Applicant notes that the amendments presented in the June 16, 2006 response to the final Office Action mailed on March 16, 2005 have not been entered, as indicated by the Advisory Action mailed on June 28, 2006.

Accordingly, the present response refers to the claims presently of record as presented in the January 3, 2006 response to the October 3, 2005 Official Action and as included herein under the heading "LIST OF CURRENT CLAIMS."

Rejection of claims 1, 4, 6, and 8 under 35 U.S.C. § 103(a)

Claims 1, 4, 6, and 8 presently stand rejected as being unpatentable over Wagner (U.S. 6,459,578) in view of Mayer (U.S. 4,399,484). This rejection is respectfully traversed for the following reasons.

It is respectfully submitted that none of the cited references disclose or suggest an airflow channel piercing through a main body from a top surface to a bottom surface thereof, and none of the cited references disclose or suggest an airflow channel is formed by an inner wall extending from said top surface to said bottom surface.

Instead of an airflow channel *piercing through* the main body, Wagner teaches "first through third air moving devices 25, 35, 45 draw air from outside of the chassis 10 through the intake port 16 into the intake duct 20. The air flows through the intake duct 20 to an interior end 28 of the intake duct 20, and subsequently through the first air moving device 25. The air then enters the first chamber 18 and flows through the apertures 34 in the plenum 30 into the second chamber 19, the apertures 34 being selectively located in the plenum 30 to direct cooling flows of air onto specific components 150, or zones, in the second chamber 19. The second air moving device 35 may be included on the plenum 30

to direct air onto a heat sink 152 via a duct 36. After the air has passed over the components 150, it enters an interior end 48 of the exhaust duct 40 via the third air moving device 45, and exits the chassis 10 through the exhaust port 17.” (*Wagner*; col. 3, lines 43-57).

None of the circuitous air ducting of *Wagner* can be construed as an airflow channel piercing through the main body from a top surface to a bottom surface thereof.

While the examiner asserts, with reference to *Wagner*’s figure 2, that *Wagner* discloses an airflow channel “wherein the airflow channel is formed by an inner wall extending from the top surface to the bottom surface of the main body,” at best *Wagner* shows a “plenum 30 that divides the chassis 10 into a first chamber 18 and a second chamber 19.” (*Wagner*; col. 3, lines 36-38). Thus, if each of the first and second chambers is construed to be an airflow channel, then neither *pierces through* the main body from *a top surface* of the main body to *a bottom surface* of the main body.

On the other hand, if the entire interior of the chassis is construed to be an airflow channel that extends from the air intake to the exhaust port (although this is neither taught nor suggested by the many internal ducts, fans, plenum, etc. of *Wagner*), then there is no airflow channel defined by an inner wall according to the claimed invention. Instead, the plenum 30 simply forms an obstruction to airflow within the entire interior of the chassis.

Therefore, *Wagner* clearly fails to disclose or suggest the claimed airflow channel.

As pointed out in the response of January 3, 2006 to the previous Office Action, Mayer does not disclose or suggest an airflow channel that is formed by an inner wall that extends from the top surface of the main body to the bottom surface of the main body.

With reference to Mayer’s specification and figures, Mayer discloses a cooling system that includes a housing 10 with plural circuit boards 20 therein. The circuit board 20 further comprises plural electronic components 21 and plural holes 22 defined in the circuit boards. The cover plate 11 is fixed on the housing 10 by screws 12. Inlet openings 14 and the exhaust openings 17 are disposed on the end plates 15 and 16 of the housing 10. A coolant flow may be connected to the housing 10 by flanges 18 to provide airflow,

from a source such as a pump, blower fan, or the like (col. 3, lines 12-17). Therefore the coolant flow, shown as the coolant flow lines 30 in Fig. 1 from the inlet openings 14, can pass through the holes 22 in one circuit board and impinge onto the electronic components 21 on the successive downstream circuit board 20 directly as shown in Fig. 2 so as to dissipate the heat generated from the electronic components 21 (Col. 3, lines 53-66).

Thus, it can be recognized that cooling airflow is not confined within an air channel extending from the top surface of the main body to the bottom surface of the main body. Moreover, there is no inner wall defining such an air channel. On the contrary, such an air channel, defined by an inner wall to guide air from the top surface of the main body to the bottom surface of the main body is counter to the method of operation of Mayer's cooling system wherein it is explicitly taught that air is to impinge directly onto electrical components inside the housing.

Therefore, Mayer clearly fails to disclose or suggest the claimed airflow channel.

As recited in claim 1 of the present invention, the airflow channel is piercing through the main body from the top surface to the bottom surface thereof, wherein the airflow channel is formed by an inner wall extending from the top surface to the bottom surface of the main body.

In Mayer's patent, the coolant flow is not confined within an airflow channel extending from the top surface to the bottom surface of the main body. Moreover, there is no inner wall confining that coolant flow.

Though the Examiner regards the first chamber 18 in Wagner's patent as the airflow channel of the present invention; nevertheless, as described on col. 6 lines 38-40 of Wagner's patent, for minimizing the escape of electromagnetic radiation, the chassis 10 should be sealed except the intake port 16 of the intake duct 20 and the exhaust port 17 of the exhaust duct 40. Based on the arrows indicating the flow of the cooling air through the chassis 10 as shown in Fig. 1, it is to be understood that the intake port 16 and the exhaust port 17 are not disposed on the top and bottom surfaces of the chassis 10. Besides, the intake port 16 of the intake duct 20 and the exhaust port 17 of the exhaust duct 40 are

located in different chambers of the chassis 10 as shown in Fig. 2. The first chamber 18 in Wagner's patent does not pierce through the top and bottom surfaces of the chassis 10 and thus can be clearly distinguished from the airflow channel of the present invention.

In addition, according to col. 3 lines 41-44 of Wagner's patent, the outside air is drawn into the chassis 10 by the air moving devices 25/35/45. While as described in col. 3 lines 12-16 of Mayer's patent, a source of coolant flow, such as a pump, blower, or fan, is connected to the flange for providing the coolant flow. In the present invention, because the airflow channel is piercing through the main body from the top surface to the bottom surface thereof, the air near the bottom surface tends to flow up through the airflow channel when it is heated by the working electronic apparatus, and thus the cool air surrounding the bottom of the main body will fill the space left by the up-flowing warm air so as to forming a cyclic airflow naturally.

Since it is indispensable to use air moving devices or pumps to force the air in Wagner's patent and Mayer's patent, the skill used in the present invention is dissimilar to the cited references and it is impossible for one having the ordinary skill in the art to infer the natural convection structure of present invention from the combination of Wagner's patent and Mayer's patent.

In conclusion, neither Wagner nor Mayer disclose the feature "the main body having the airflow channel piercing through the main body from the top surface to the bottom surface thereof, wherein the airflow channel is formed by an inner wall extending from the top surface to the bottom surface of the main body" in claim 1 of the present invention. Also, it is apparently that one with ordinary skill in the art will have no chance to be taught by the combination of two devices, which are operated with an active air dissipating mechanism, when designing a device operated in a natural convection structure.

Accordingly, since neither Wagner nor Mayer teach or suggest the claimed airflow channel, the combination of Wagner and Mayer cannot be construed to disclose or suggest the claimed airflow channel. Because Wagner and Mayer fail to teach or suggest each and

every element set forth in claim 1 of the present application, it is respectfully submitted that claim 1, along with claims 2-6 and 8 which depend from claim 1, are allowable over the cited references.

Rejection of claim 5 under 35 U.S.C. § 103(a)

Claim 5 presently stands rejected as being unpatentable over Wagner and Mayer, and further in view of Chuang (U.S. 2004/0095713). This rejection is respectfully traversed for the following reasons.

As discussed above, Wagner and Mayer fail to disclose or suggest each and every element set forth in claim 1 of the present application. Because claim 5 depends from claim 1, and because Chuang fails to supplement the deficiencies of Wagner and Mayer discussed above, claim 5 is allowable for at least the reasons discussed above relative to claim 1. Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion


In view of the foregoing remarks, it is respectfully submitted that the application is in condition for allowance. Accordingly, it is requested that claims 1-6 and 8 be allowed and the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's attorney, the Examiner is invited to contact the undersigned at the numbers shown.

Respectfully submitted,

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